What is claimed is:

1. A method for producing commands for current comprising:

generating a command for current; and

preventing the command from exceeding a limit dynamically determined as a function of power dissipation in a component estimated from a measured current level indicative of current in the component and as a function of a measured temperature proximate to the component.

2. The method of claim 1 wherein the command controls motor drive current and the component comprises a motor winding.

3. The method of claim 1 wherein the command controls motor drive current and the component comprises a power transistor.

4. The method of claim 1 wherein the limit is further a function of a predetermined maximum temperature for the component.

5. The method of claim 1 wherein the command is further prevented from exceeding a fixed limit.

6. The method of claim 1 wherein the command is further prevented from exceeding a second limit dynamically determined as a function of power dissipation in a second component estimated from a measured current level indicative of current in the second component and as a function of a measured temperature proximate to the second component.

7. In a system issuing commands for current, the improvement comprising:

dynamically determining a first level of current that will not overheat a first component;

dynamically determining a second level of current that will not overheat a second component; and

preventing the commands from requesting current in excess of any of the first and second dynamically determined levels.

8. The improvement of claim 7 further comprising preventing the commands from requesting current in excess of a fixed limit.

9. The improvement of claim 7 wherein said first component comprises a motor winding.

10. The improvement of claim 7 wherein said second component comprises a power

transistor.

11. The improvement of claim 9 wherein dynamically determining a first level includes dynamically determining power dissipation in the motor winding estimated from a measure of amount of a motor drive current.

12. The improvement of claim 11 wherein the first level is a function of estimated temperature of the motor winding determined as a function of a measured temperature and as a function of estimated power dissipation in the motor winding.

13. The improvement of claim 12 wherein dynamically determining power dissipation in the motor winding is further estimated as a function of the estimated temperature of the motor winding.

14. The improvement of claim 12 wherein the first level is further a function of a predetermined maximum temperature for the motor winding.

15. The improvement of claim 10 wherein determining a second level includes dynamically determining power dissipation in the power transistor estimated from a measure of transistor current.

16. The improvement of claim 15 wherein the second level is a function of estimated temperature of the power transistor determined as a function of a temperature measured proximate the power transistor and as a function of estimated power dissipation in the power transistor.

17. The improvement of claim 16 wherein dynamically determining power dissipation in the power transistor is further estimated as a function of the estimated temperature of the power transistor.

18. The improvement of claim 16 wherein the second level is further a function of a predetermined maximum temperature for the power transistor.

19. In a system issuing commands for motor current in a motor, the improvement comprising:

dynamically determining a first limit as a function of measured motor current and as a function of a measured temperature proximate the motor;

dynamically determining a second limit as a function of measured transistor current and as a function of measured temperature proximate the transistor; and

preventing the commands for current from exceeding any of the first and second

dynamically determined limits.

20. The improvement of claim 19 further comprising preventing the commands for motor current from exceeding a fixed limit.

21. The improvement of claim 19 wherein dynamically determining a first limit includes dynamically determining power dissipation in the motor winding estimated from the measured motor current.

22. The improvement of claim 21 wherein dynamically determining a first limit further includes estimating temperature of the motor winding as a function of the measured temperature proximate the motor and as a function of the dynamically determined power dissipation in the motor winding and examining the estimated temperature relative to a predetermined maximum temperature for the motor winding.

23. The improvement of claim 22 wherein dynamically determining power dissipation in the motor winding is further estimated as a function of the estimated temperature of the motor winding.

24. The improvement of claim 19 wherein determining a second limit includes dynamically determining power dissipation in the transistor estimated from the measured transistor current.

25. The improvement of claim 24 wherein dynamically determining a second limit further includes estimating temperature of a junction in the transistor as a function of the measured temperature proximate the transistor and as a function of the dynamically determined power dissipation in the transistor and examining the estimated temperature relative to a predetermined maximum temperature for the transistor junction.

26. The improvement of claim 25 wherein dynamically determining power dissipation in the transistor is further estimated as a function of the estimated temperature of the transistor.

27. A computer program product for use in controlling commands for motor current, the computer program product comprising a computer usable medium having computer readable code thereon, the computer readable program code including:

program code for dynamically determining a first limit as a function of estimated temperature of a motor winding;

program code for dynamically determining a second limit as a function of estimated

temperature of a power transistor; and

program code for preventing the commands for motor current from exceeding any of the first and second dynamically determined limits.

28. The computer program product of claim 27 further comprising program code for preventing the commands for motor current from exceeding a fixed limit.

29. A computer program product for use in controlling commands for motor current, the computer program product comprising a computer usable medium having computer readable code thereon, the computer readable program code including:

program code for dynamically determining a first limit as a function of measured motor current and as a function of a measured temperature proximate the motor;

program code for dynamically determining a second limit as a function of measured transistor current and as a function of measured temperature proximate the transistor; and

program code for preventing the commands for current from exceeding any of the first and second dynamically determined limits.

30. The computer program product of claim 29 further comprising program code for preventing the commands for motor current from exceeding a fixed limit.

31. A control circuit for a motor comprising:

motor windings;

at least three power transistors providing current to said motor windings;

a current sensor measuring at least one motor current;

a temperature sensor measuring temperature of a heat sink in proximity to the motor ;

a processor responsive to the measured current and the measured temperature to calculate estimated temperature of the one of the at least three power switches, said processor further calculating estimated temperature of the motor winding and dynamically determining a current command limit as a function of estimated power switch temperature, a second current command limit as a function of estimated motor winding temperature and a lowest limit from among the first current command limit, the second current command limit and a fixed limit; and

limiting current commands to said motor to no more than the dynamically determined lowest limit.

32. The control circuit of Claim 31, wherein such motor is brushless.

33. A control circuit for a motor comprising:

motor windings;

at least three power transistors providing current to said motor windings;

a current sensor measuring at least one power transistor current;

a temperature sensor measuring temperature of a heat sink near at least one of the power transistors;

a processor responsive to the measured current and the measured temperature to calculate estimated temperature of the one of the at least three power switches, said processor further calculating estimated temperature of the motor winding and dynamically determining a current command limit as a function of estimated power switch temperature, a second current command limit as a function of estimated motor winding temperature and a lowest limit from among the first current command limit, the second current command limit and a fixed limit; and

limiting current commands to said motor to no more than the dynamically determined lowest limit.

34. The control circuit of Claim 33, wherein such motor is brushless.

35. A method for producing commands for current in a vehicle having a plurality ground contacting members each ground contacting member separately driven by its respective motor, the method comprising:

dynamically determining a current command limit for each respective motor;

applying a lowest of the dynamically determined current command limits to each of the respective motors so that current commands to each of the respective motors are subject to the same current command limit.

36. The method of claim 35, wherein such device is a vehicle.

37. The method of claim 36, wherein such plurality of ground contacting members are two co-axial wheels.